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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/099,893

03/14/2002

Murray Steven Rodgers

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06/10/2004

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EXAMINER

TAMAI, KARL I

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 06/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Applicati n N .

10/099,893

Applicant(s)

RODGERS, MURRAY STEVEN

Examiner

Tamai IE Karl

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Serial No(s)/Mail Date 12/02, 4/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

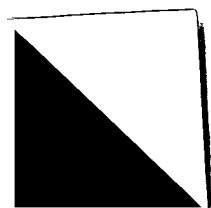
1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, center beam, the first and second central beams, the first plurality of lateral beams, plurality of actuation beams, the second plurality of lateral beams interconnecting the actuation beams, actuation beams being parallel to the central beam, the plurality of third and fourth and fifth lateral beams, first and second and third and fourth flexure beams must be shown or the feature canceled from the claims. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the



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specification, such as, for example: page 35, line 8: the specification recites "first lower support arm 140" but reference number 140 is the third lower support arm according to line 5.

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: longitudinal center beam, the first and second central beams, the first plurality of lateral beams, plurality of actuation beams, the second plurality of lateral beams interconnecting the actuation beams, actuation beams being parallel to the central beam, the plurality of third and fourth and fifth lateral beams, first and second and third and fourth flexure beams. For the purposes of advancing prosecution on the merits the examiner will assume the specifications center bar is the claims center beam and the specifications arms are the claims lateral beams.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-40 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed,



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had possession of the claimed invention. The specification does not contain a full, clear, concise, and exact written description of what constitutes the invention. The detailed description of the invention uses different terms for than the claims, such as, for example: actuation element, center beam, the first and second central beams, the first plurality of lateral beams, plurality of actuation beams, the second plurality of lateral beams interconnecting the actuation beams, actuation beams being parallel to the central beam, the plurality of third and fourth and fifth lateral beams, and first and second and third and fourth flexure beams. The specification does not contain a full, clear, concise, and exact written description of the actuation beams being parallel to the center beam.

The claims are interpreted as best understood by the examiner in an attempt to advance prosecution on the merits.

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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8. Claims 1-3, 5-7, 12-15, and 17-19 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Uenishi et al. (Uenishi)(JP 09-159939). Uenishi teaches a suspension system having a center beam and a plurality of lateral beams 5 which are inherently stretched/flexed when driven by the actuator arms 7. Uenishi teaches actuation beams (comb electrodes) that are parallel to the center beam and integral with the flexed lateral beam and center beam, where the electrodes are connected by lateral beams.

9. Claims 1-7, 12-19, 25, 28-31, 33, 34, 35, 38, 39, and 40 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Lee et al. (Lee)(US 6308573). Lee teaches a suspension system having a center beam 22 and a plurality of first and second lateral beams 23 which are inherently stretched/flexed when driven by the actuator arms 7. Lee teaches actuation beams 27 that are parallel to the center beam and integral with the lateral and center beam, where the electrodes are connected by lateral beams. Lee teaches the actuation assembly 43, 46 between the substrate and the lateral beams 44. Regarding, claims 12-24, Lee teaches the second lateral beams being part of the electrodes with are free from restrictive connections and inherently flex during operation, and a third plurality of beams between the comb electrodes, with the fourth and fifth electrodes being connected to the substrate.

10. Claims 1-3, 5-7, 12-15, 17-19, 25, 28-35, and 38-40 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Lee et al. ('033)(US 6360033). '033

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teaches a suspension system having a center beam 21 and a plurality of first/third 28 and second/fifth lateral beams (34, 35 mobile electrodes) which are inherently stretched/flexed when driven by the actuator comb beams. '033 teaches actuation beams (comb electrodes) that are parallel to the center beam and integral with the lateral and center beams, where the electrodes are connected by lateral beams and axially position between the beams.

In regards to claims 25-41, '033 teaches a switch four lateral beam (figure 3, with flat springs 26), with four flexure beams supporting the comb electrodes that are not connected to the substrate. It is inherent that the cantilevered electrodes supported only at the central beam are capable of flexing/pivoting during operation, which will be displaced by a greater distance than the center beam the motion of the actuator. The distal ends of the actuation flexures having electrodes/actuation beams.

### ***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 8-11 20-24, 26, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (Lee)(US 6308573) or Lee et al. ('033)(US 6360033), in further view of Galvin et al. (Galvin)(US 6149190). Lee/'033 teach the lateral beams connected together with the central beam. Lee teaches a support assembly which is

mover 22, but does not teach the center beam being 2 beams or the actuation beams between the first and fourth lateral beams. Galvin teaches the center beam being two beams interconnected by cross supports to provide a high degree of stiffness. Galvin teaches the electrostatic electrodes between the suspension beams. It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide the actuator of Lee/'033 with the center being two beams because Galvin teaches it provides stiffness, and with the electrodes between the lateral beams to provide stability, as shown in Galvin.

13. Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. ('033)(US 6360033). '033 teaches every aspect of the invention except the actuation beam between the flexure beams and the substrate, and the flexure beams between the actuation beams and the substrate. It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide the actuator of '033 with the actuation beam between the flexure beams and the substrate, and the flexure beams between the actuation beams and the substrate to optimize the performance of the actuator, and because it has been held that mere rearranging parts involves only routine skill in the art, *In re Japikse*, 86 USPQ 70.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (571) 272 - 2036.

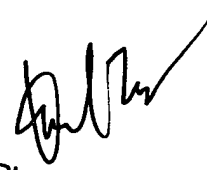


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The examiner can be normally contacted on Monday through Friday from 8:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Darren Schuberg, can be reached at (571) 272 - 2044. The facsimile number for the Group is (703) 872 - 9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Karl I Tamai  
PRIMARY PATENT EXAMINER  
June 3, 2004



KARL TAMAI  
PRIMARY EXAMINER